

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of treating electrically conductive waste contaminated with nuclear fuel materials from a nuclear fuel handling facility, which comprises:

a molten salt electrolysis process for removing the nuclear fuel materials adhering to a surface of the waste by immersing the waste in a molten salt to dissolve a surface layer of the waste electrochemically in molten salt without dissolving the nuclear fuel materials so as to provide a decontaminated electrically conductive waste; and

a filtering process for filtering the molten salt used in the molten salt electrolysis process to extract the nuclear fuel materials removed from the surface of the waste and accumulated in the molten salt from the molten salt;

wherein the molten salt filtered in the filtering process is reused in the molten salt electrolysis process.

2. (Original) The method according to claim 1 further comprising an evaporation process for removing the molten salt adhering to a surface of the waste processed by the molten salt electrolysis process and taken out of the molten salt by heating the waste so that the molten salt adhering thereto evaporates;

wherein the molten salt recovered in the evaporation process is reused in the molten salt electrolysis process.

3. (Original) The method according to claim 1 further comprising:

a cleaning process for removing the molten salt adhering to the waste processed by the molten salt electrolysis process and taken out of the molten salt by a cleaning liquid; and

an evaporative drying process for drying the molten salt contained in the cleaning liquid by evaporating the cleaning liquid used in the cleaning process;

wherein the molten salt recovered in the evaporative drying process is reused in the molten salt electrolysis process, and the cleaning liquid evaporated in the evaporative drying process is reused in the cleaning process.

4. (Original) The method according to claim 1, wherein the molten salt and the waste immersed in the molten salt are moved relative to each other in the molten salt electrolysis process to remove the nuclear fuel materials from the surface of the waste.

5. (Original) The method according to claim 4, wherein, in the molten salt electrolysis process, the waste is contained in a basket serving as an electrode for an electrolysis and the basket is vibrated in the molten salt.

6. (Original) The method according to claim 4, wherein, in the molten salt electrolysis process, the waste is contained in a basket serving as an electrode for an electrolysis and the basket is rotated in the molten salt.

7. (Original) The method according to claim 4, wherein, in the molten salt electrolysis process, the molten salt is spouted against the waste immersed in the molten salt.

8. (Original) The method according to claim 1, wherein, a liquid metal, which is in a liquid phase at a temperature high enough to maintain the molten salt in a molten state, is placed in the molten salt as an electrode for the molten salt electrolysis process.

9. (Original) The method according to claim 1 further comprising a reducing process for reducing the nuclear fuel materials to metals before subjecting the waste to the molten salt electrolysis process when the nuclear fuel materials are oxides.

10. (Original) The method according to claim 9, wherein, in the reducing process, the nuclear fuel materials are reduced to metals by making the nuclear fuel materials react with a reducing agent.

11. (Original) The method according to claim 10, wherein the reducing process comprises:

immersing the waste contaminated with the nuclear fuel materials in a reducing molten salt;

supplying a reducing agent into the reducing molten salt; and
applying a voltage that will not cause a decomposition of the reducing molten salt across an anode and a cathode immersed in the reducing molten salt to regenerate the reducing agent reacted with the nuclear fuel materials.

12. (Original) The method according to claim 9, wherein the reducing process comprises:

immersing the waste contaminated with the nuclear fuel oxides in a reducing molten salt; and

reducing the nuclear fuel materials to metals by applying a voltage across an anode and a cathode immersed in the reducing molten salt for an electrolytic reduction.

Claims 13-28 (Canceled)